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Keying Desire: Alfred Kinsey's Use of Punched-Card Machines for Sex Research

DONNA J. DRUCKER
Technische Universität Darmstadt

NINETEEN-FORTY WAS A CRITICAL YEAR for the Indiana University (IU) zoology professor Alfred Kinsey. His lifelong interest in entomology was waning, as he had begun to gather the sexual histories of homosexual men and women and their friends in northern Indiana and Chicago. He was preparing his first article on human sexuality, "Criteria for a Hormonal Explanation of the Homosexual," which sharply criticized research correlating men's lesser or greater testosterone levels with their sexual preferences. The IU marriage course, during which Kinsey gave illustrated lectures on the anatomy and physiology of human sexual behavior to hundreds of eager undergraduates, was shut down in September after two years by a cautious administration, the university's dean of women, upset parents, and angry campus physicians. The president of the university gave Kinsey a choice: either he could continue to teach the marriage course under the watchful eye of campus medical staff, or he could continue to gather the histories of faculty, students, and others who provided him with their sex histories in private interviews. For Kinsey, whose strong interest in mass collecting shaped the trajectory of his research life, the decision required little reflection. His part in the marriage course was over, and his amassing of sex histories and organizing of their data increased immediately. In late September of that same year, he drafted a model for understanding gradations in human sexuality, the 0–6 (heterosexuality–homosexuality) scale, in a letter to one of his graduate students.[1]

Kinsey's classificatory techniques also reached a turning point in 1940. He moved from using the naked eye and microscope for insect taxonomy to orga-

[1] Alfred C. Kinsey, "Criteria for a Hormonal Explanation of the Homosexual," *Journal of Endocrinology* 1, no. 5 (1941): 424–28; Donna J. Drucker, "'A Noble Experiment': The

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nizing mass amounts of human sexual behavior data with the help of punched-card machines.[2] Kinsey's rapid adoption of those machines provides insight into the role of technology and mass-produced data in the classification, analysis, and dissemination of sexual knowledge. Some scholars have argued that mid-twentieth-century technologies of classification—particularly punched cards and punched-card sorters—became symbols of depersonalization and alienation in an ever more mechanized world. They note the impersonality of the machines when processing human data: machines separate the data on the card from the individual, thus separating the machine operator and data processor from direct contact or reckoning with the reality of the individual who provided those data.[3] As one historian of technology has stated about the late twentieth century, "Every aspect of the human is being converted into computer information."[4] Nonetheless, in the case of Kinsey's data, aggregating and anonymizing information about human sexuality provided some key groundwork for gay and lesbian civil rights.

Kinsey's utilization of punched-card machines was indeed a departure from previous forms of sex research, which had focused on qualitative narrative data over quantitative statistical data. Kinsey's enthusiastic and unapologetic use of machines signaled to academic and psychiatric critics especially that technology had taken over the intimate subject of human sexuality, even if machine-processed quantitative data did not become an integral part of

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Marriage Course at Indiana University, 1938–1940," *Indiana Magazine of History* 103, no. 3 (2007): 231–64. The letter in which Kinsey explained the 0–6 scale is Alfred C. Kinsey to Glenn V. Ramsey, 20 September 1940, folder 1, Ramsey File, Alfred C. Kinsey Correspondence Collection, Kinsey Institute Archives, Bloomington, Indiana (hereafter KIA). The estimates for the largest portion of Kinsey's gall wasp collection, housed at the American Museum of Natural History (hereafter AMNH), range from 5.5 million to 8 million individual specimens. It has never been completely counted or cataloged. Mont A. Cazier to Albert E. Parr, memo, Regarding: Kinsey Collection of Gall Wasps as Follows, 16 August 1957, folder 1957, box 1209, 1950–61, Central Archives, AMNH Library, New York. There are additional thousands of Kinsey's gall and gall wasp specimens at the Museum of Comparative Zoology at Harvard University.

[2] See Donna J. Drucker, "'Building for a Life-Time of Research': Letters of Alfred Kinsey and Ralph Voris," *Indiana Magazine of History* 106, no. 1 (2010): 70–101, for a discussion of Kinsey's shift from entomology to sexology.

[3] Steven Lubar, "Steven Lubar's Remarks, Hollerith Centennial Observance, June 20, 1990, at the Census Bureau, Suitland, Md.," in *100 Years of Data Processing: The Punch Card Century* (Washington, DC: Bureau of the Census, 1991), 18–24, esp. 22; Sarah E. Igo, *The Averaged American: Surveys, Citizens, and the Makings of a Mass Public* (Cambridge, MA: Harvard University Press, 2007), 217–18, esp. 218; Lars Heide, *Punched-Card Systems and the Early Information Explosion, 1880–1945* (Baltimore, MD: Johns Hopkins University Press, 2009), 248.

[4] Chris Habels Gray, "The North American 'Body-Machine' Complex," in *A Companion to American Technology*, ed. Carroll Pursell (Oxford: Blackwell, 2005), 193. The total interviews by Kinsey and his colleagues from 1938 to 1963 numbered 18,216. See Paul H. Gebhard and Alan B. Johnson, *The Kinsey Data: Marginal Tabulations of the 1938–1963 Interviews Conducted by the Institute for Sex Research* (Philadelphia: W. B. Saunders, 1979), 2.

academic sex research until much later in the twentieth century. For the most part, Kinsey's adoption of punched-card machines received only minor criticism, and researchers would incorporate machines and data processing into human science research with questions but little resistance.

As is well known, Kinsey and his research team at the Institute for Sex Research (ISR) published two large and dense volumes: *Sexual Behavior in the Human Male* (1948) and *Sexual Behavior in the Human Female* (1953).[5] The first (hereafter the *Male* volume), published the first week of January 1948, was based on 5,300 white American male histories, and the second (hereafter the *Female* volume), published the third week of August 1953, was based on 5,940 white American female histories. Though much of the volumes' content and findings were based on punched-card data, the cards and machines themselves have played little part in biographies of Kinsey and histories of the ISR. Previous scholars of Kinsey's life and work have minimized discussion of his use of punched-card machines in favor of close attention to his own sexual behavior, personality, and other aspects of his research, such as filming and photographing the sexual behavior of humans and other animals.[6] The machine-generated data presented in the Kinsey reports, particularly the 0–6 scale and the percentages of same-sex behavior in the US male population, are key to understanding the historical roots of present-day themes in American sexual politics and sexual identity. The data collected and analyzed in the Kinsey reports could not have been processed or analyzed without machines.

This article focuses on the routine and repetitive aspects of Kinsey's sex research and their outcomes: first, the machines and punched cards themselves; second, the process of transferring sex history interview data to punched cards as well as the organizing, sorting, and utilization of the data collated in the cards; and third, receptions of his work in academe and beyond. Kinsey's use of punched-card machines thus became another focal point in the multiple and complex public discourses surrounding sexuality in the immediate postwar period. In particular, the machine-processed data that Kinsey put forth increased knowledge of homosexuality and of diverse sexualities generally, and those data were instrumental in developing gay and lesbian rights movements.

[5] Alfred C. Kinsey, Wardell B. Pomeroy, and Clyde E. Martin, *Sexual Behavior in the Human Male* (Philadelphia: W. B. Saunders, 1948); Alfred C. Kinsey, Wardell B. Pomeroy, Clyde E. Martin, and Paul H. Gebhard, *Sexual Behavior in the Human Female* (Philadelphia: W. B. Saunders, 1953). The ISR was renamed the Kinsey Institute for Research in Sex, Gender, and Reproduction in 1982. See "Chronology of Events and Landmark Publications," Kinsey Institute for Research in Sex, Gender, and Reproduction, available online at http://www.kinseyinstitute.org/about/chronology.html (accessed 3 August 2012).

[6] James H. Jones, *Alfred C. Kinsey: A Public/Private Life* (New York: W. W. Norton, 1997); Jonathan Gathorne-Hardy, *Kinsey: Sex the Measure of All Things: A Life of Alfred C. Kinsey* (1998; Bloomington: Indiana University Press, 2004).

PUNCHED-CARD MACHINERY AND ITS USES

Punched-card machines were in wide use in businesses, governments, and universities when Kinsey first envisioned using them in late 1940 at the suggestion of IU astronomy professor Frank Edmonson. The machines were also known as Hollerith machines, after their inventor, Herman Hollerith, or IBM machines, after their primary American manufacturer.[7] Kinsey's decision to adopt them for sex research was part of the "continuous spread in usage of the punched card machinery" worldwide from the 1890s, when it was first developed, through the 1960s, when it was replaced with computers that had much more sophisticated programming capabilities. At the time, though, "the punched card was the basis for the most advanced information technology," and Kinsey wanted his methodology and machinery to be as organized, stable, and accurate as those of his peers in the life and human sciences.[8] A 1936 instructional manual for machine coding also noted that "although the types of coding are limited, the range of applications is extremely wide. . . . Careful planning and ingenuity can be used in the construction of a code to make it instrumental in simplifying the handling of special peculiarities that are distinctive of each individual business."[9]

As a scientist, Kinsey knew the benefits of a sophisticated organizational system. During his career as an entomologist, he had organized his vast gall wasp collection in sturdy Schmitt boxes: rectangular wooden boxes with glass lids into which deceased specimens could be pinned, labeled, and preserved with mothballs. The boxes easily fit into orderly cabinet shelves. The Schmitt box resembled a punched card to some extent, as a scientist could organize the data within and between separate boxes to suit his or her research needs. Once the original data entry was complete, both punched cards and Schmitt boxes and their keys and labels could be manipulated in multiple ways as needed.

If the basic unit of a taxonomic organization system was the Schmitt box, the basic unit of any tabulator system was the punched card. Rectangular holes in the cards represented data points made at preset positions. The perforations could be "sorted, counted, and tabulated by a series of machines, automatically, as often and in as many different ways as desired by the operator."[10] All

[7] Frank da Cruz, "Herman Hollerith," *Columbia University Computing History*, available online at http://www.columbia.edu/cu/computinghistory/hollerith.html (accessed 3 August 2012).

[8] Gathorne-Hardy, *Kinsey*, 186; Arthur L. Norberg, "High-Technology Calculation in the Early 20th Century: Punched Card Machinery in Business and Government," *Technology and Culture* 31, no. 4 (1990): 771; Heide, *Punched-Card Systems*, 5.

[9] International Business Machines Corporation, "IBM Machine Methods of Accounting: The Preparation and Use of Codes: Pamphlet No. AM-5-1," 1936, 15, "Manual of Instruction 1936" folder, box 98, series 60, Computer Product Manuals Collection, Charles Babbage Institute, University of Minnesota Archives, Minneapolis (hereafter CBI).

[10] Norberg, "High-Technology Calculation," 756. A 1936 International Business Machines Corporation (IBM) pamphlet on punched cards encouraged users of tabulating

parts of a punched-card operation had function and meaning, and all were automated for efficiency and flexibility. Kinsey used most of those functions in his statistical calculations. For example, all the cards with punches for extramarital intercourse could be sorted with those for a certain age group and social level, and his staff could then calculate the rate of extramarital intercourse for that age group and social level with minimal effort.

The three separate machines needed to handle basic operations of the punched-card system were the key punch, the tabulator (also known as the accounting machine), and the sorter.[11] The key punch, in the words of Wallace Eckert, the author of the first guidebook for using punched-card machines (called the orange book), was "used to transfer the initial data of a problem from the manuscript to the punched cards." A blank card would be inserted into the punch, and the machine operator—on Kinsey's staff that was initially Clyde Martin, its youngest member and an undergraduate student at IU (see fig. 1)—would select where the punching knives would make holes in the cards. The speed of the punching operation depended on the quickness of the operator, the clarity of the manuscript, and the amount of punching needed. Eckert estimated that an experienced operator could process between 125 and 200 cards per hour. If multiple cards needed to be punched at the same time, data could be transferred from one card to another by wiring the key punch to punch subsequent cards the same way as previous ones in an operation called "gang punching."[12]

The sorter automatically divided the cards into groups according to the punches in any of the eighty columns selected. The cards were placed in the "card hopper" at one end of the sorter, the desired data points were selected, and cards would then sort into any of thirteen receptacles.[13] After a card was passed through the feed mechanism, the numbers from the

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machinery to pay as much attention to the small cards—"the medium which actuates the various machines"—as to the big, noisy machines. Cards "play a part which is as essential and important as" the machines. The cards were not merely "stationery" but rather "an essential part of a machine system" that required the same levels of precision and automation in their manufacture, use, and care as the more obvious machines. International Business Machines Corporation, "IBM Machine Methods of Accounting: The IBM Card; Pamphlet No. AM-3-2," 1936, 1, 5, "Manual of Instruction 1936" folder, box 98, series 60, CBI.

[11] Norberg, "High-Technology Calculation," 768. Kinsey, Pomeroy, and Martin are pictured with a type 75 sorter in the illustrations for Wardell B. Pomeroy, *Dr. Kinsey and the Institute for Sex Research* (New York: Harper & Row, 1972), 240–41.

[12] Wallace Eckert, "Punched Card Methods in Scientific Computation," ca. 1939, typescript, 11, 13, 28, folder 16, box 1, Wallace Eckert Papers, CBI; see also Wallace John Eckert, *Punched Card Methods in Scientific Computation* (New York: Thomas J. Watson Astronomical Computing Bureau, Columbia University, 1940).

[13] Eckert, *Punched Card Methods*, 10–12; International Business Machines Corporation, "IBM Electric Punched Card Accounting Machines: Principles of Operation; Sorters Types 82, 80 and 75," IBM Form 22-3177-2 (1949; IBM Corporation, New York, 1953), 13–15, "Sorters 80, 82, 75" folder, box 98, series 60, Computer Product Manuals Collection, CBI.

Figure 1. Clyde Martin using a punched-card sorter to organize sex research data ca. 1950. Photo by William Dellenback. Reprinted by permission of the Kinsey Institute for Research in Sex, Gender, and Reproduction, Inc.

desired data points were shown on dials or were printed on paper. Working the tabulating machines required real physical labor. The cards had to be entered into and removed from each machine and hand-carried to the next. Keeping cards organized after tabulating and sorting had to be done by hand, usually by filing the cards in large cabinets, but they could be stored and reused indefinitely.

The use of punched-card machines for data processing required the data's creator to conceive of likely patterns of data organization beforehand in such a way that the data could be easily transferred onto punched cards and subsequently ordered and sorted mechanically.[14] Punched-card machines could not be easily adopted in the midst of a given task, as "their use required a high use of standardization and formalization of the tasks to be

[14] Eckert, *Punched Card Methods*, 25. A former operator agreed that "punched cards make it easier to find information once it has been stored in the proper form; however, they do not eliminate in any way the basic problem of entering and arranging (or classifying) information that is to be brought into the system." See Herbert Ohlman, "Technical Information—Part I: Technical Literature and Punched Cards," typescript, February 1955, 11, folder 7, box 1, series 179, Herbert Ohlman Papers, CBI.

processed, which, in turn, made greater demands on the user organization than did competing technologies."[15] Kinsey took on the time-consuming challenge of preorganizing interview data so that they could be moved from the interview sheet to the punched card. Kinsey's interview code sheet, as outlined below, showed that he developed its format with the intention of transferring the data easily to punched cards.

Once a researcher met the requirements for standardization, however, imagination was the only limit. As Eckert wrote in 1940, "The great advantage of the electric method for scientific computation is its flexibility: . . . the necessary machine changes in going from one problem to another can be accomplished by the operator in a few minutes."[16] In fact, the effectiveness of punched-card machinery only increased as research problems became more complex.[17] Arthur L. Norberg concludes that tabulators were "significant tools in the establishment of effective procedures for managing records" and "fostered a better understanding of problems entailed in calculation and, beyond that, a vision of how those problems could be addressed even more effectively."[18] Kinsey's use of punched-card technology was yet another example of "the scope of administrative ambitions in private companies" once the technology had become advanced enough to handle more complex applications beyond addition and sorting.[19]

The Punched-Card Machine in Sex Research

Kinsey exploited the functions of the tabulating machines in earnest. He wanted to find frequencies of specific sexual behaviors and to correlate them with the data collected on personal traits such as age, age at onset of adolescence, religion, degree of religious adherence, social level, educational level, and marital status. He and his team could then advance arguments regarding the reasons for the relationships between an individual's sexual behavior and his or her biological and cultural make-up. Before that could happen, though, the interview questions on the sheet needed to be assigned precisely for maximum ease of information transfer.

The exact form and substance of Kinsey's earliest sex history interviews are not known. Glenn V. Ramsey, a graduate student in education and one of the first IU students to tell Kinsey his sex history in summer 1938, remembered thirty years later that "I was a little tense and anxious during the first few minutes of the interview, but soon became quite relaxed in

[15] Heide, *Punched-Card Systems*, 6.

[16] Eckert, *Punched Card Methods*, iii.

[17] W. E. Paulson and Robert L. Smith Jr., "Fuller Usage of Punch-Card Equipment in Social Science Research through Improving Techniques," *Journal of Farm Economics* 35, no. 2 (1953): 261; see also Norberg, "High-Technology Calculation," 755.

[18] Norberg, "High-Technology Calculation," 779.

[19] Heide, *Punched-Card Systems*, 266.

giving my history—and at the end I felt that this man really knew what he was doing."[20] Gradually the interview developed into a set of 521 questions, though most individuals' experiences were covered in approximately 300 questions. In addition to basic demographic data, interviewees were asked about numerous forms of sexual arousal, the timing and context for their arousal (such as a preference for nudity or clothing and a light or dark room), their coital positions, and the percentage of sexual encounters that led to orgasm. Some questions were gender-restricted: only men were asked if they had two healthy testicles, and only women were asked about menstruation. The average interview took between ninety minutes and two hours. If the interview and answers were routine, all of the answers could fit in the boxes designated on a single interview sheet. The answer sheet was divided into seven vertical columns, each of which was then subdivided into three or four thematic subheadings with varying spaces beneath them for answers. For example, the first column included the subheadings "Health," "Marriage," and "Anatomy" and the second column "Erotic Arousal," "Family Bg. [Background]," and "Sex Ed. [Education]."[21] The sheet was designed for maximum efficiency in coding, which the overworked ISR staff interviewers acknowledged but nonetheless resented as they turned their attention to data processing.

Kinsey and the other men entrusted with the whole set of questions memorized both them and the accompanying codes to record the answers during the interviews. The unwritten questions and answer sheet codes protected interviewees' identities, speeded the recording of their answers, made it easier for the interviewer to see if he missed a question, and kept outsiders from being able to crack the code. "Coding at the time of interview serves several functions," Kinsey further affirmed in the *Male* volume. "It facilitates the transference of the data from the original record sheet to punched cards for statistical analyses."[22] The questioner always showed the interviewee the coded sheet, and interviewees were reassured that their contributions would stay anonymous and confidential. The questions were first made public only with the publication of Paul H. Gebhard and Alan B. Johnson's *The Kinsey Data* in 1979. The meanings of the code markings on the interview sheets and the correlations of the interview questions to their place on the sheet were not published until 1985, and then only for in-house use at the ISR. Machine coding added another level of identity protection

[20] Glenn V. Ramsey, interview by James H. Jones, typescript, 6–7, 15 March 1972, Center for the Study of History and Memory, Indiana University, Bloomington, Indiana (hereafter CSHM).

[21] Joan Scherer Brewer, ed., *The Kinsey Interview Kit* (Bloomington, IN: Kinsey Institute for Research in Sex, Gender, and Reproduction, 1985), 61–62, 18. See also Thomas G. Albright, ed., *The Kinsey Interview Kit: Codebook*, 2nd ed. (1991; Bloomington, IN: Kinsey Institute for Research in Sex, Gender, and Reproduction, 2006).

[22] Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 71, 72.

and secrecy to this work. Robert Yerkes, chair of Kinsey's primary funder, the National Research Council's Committee for Research on Problems of Sex (CRPS), and thus a highly important figure in Kinsey's world, had his own history taken on a visit to the ISR in early December 1942 and was impressed with the layers of confidentiality Kinsey had instilled in his data collection process.[23]

Kinsey's first grant from the CRPS made possible the rental of the tabulating equipment and the purchase of a calculator to supplement it. Kinsey eventually purchased most of the equipment that he used and periodically upgraded it, including, for example, a machine called an interpreter that he bought in 1946. The interpreter added printing to punched but otherwise blank cards, and Kinsey's team used it to label columns on the sex history interview cards.[24] Kinsey mentioned those upgrades and new additions to his laboratory machinery in his 1946 report to the CRPS, stating that the punch and interpreter "are complex and important machines for our use."[25]

Once the machines arrived, Kinsey and Martin began to transfer the interview data, which had previously existed only on handwritten sheets, into punched-card data. Wardell B. Pomeroy, who joined the project in 1943, noted that "both Martin and Kinsey made the mistakes beginners usually make, and it took some time to effect the transfer properly."[26] Certain features of punched-card machinery—particularly the anonymity created by aggregating the sex history data on cards and the machinery's ability to process large quantities of data quickly—were especially appealing to Kinsey as he began to work more closely with the punched-card machines. In March 1941 he wrote excitedly to Glenn Ramsey:

[23] Brewer, *Interview Kit*; Jones, *Alfred C. Kinsey*, 433. The interview kit and codebooks are now available online: "Data and Codebooks," Kinsey Institute for Research in Sex, Gender, and Reproduction, http://www.kinseyinstitute.org/research/kidata.html (accessed 3 August 2012).

[24] James W. Cortada, *Before the Computer: IBM, NCR, Burroughs, and Remington Rand and the Industry They Created, 1865–1956* (Princeton, NJ: Princeton University Press, 1993), 125; Frank da Cruz, "IBM Reproducing/Summary Punches," *Columbia University Computing History*, available online at http://www.columbia.edu/acis/history/reproducer.html (accessed 3 August 2012); da Cruz, "IBM Tabulators and Counting Machines," *Columbia University Computing History*, available online at http://www.columbia.edu/acis/history/tabulator.html (accessed 3 August 2012); da Cruz, "The IBM 405 Alphabetical Accounting Machine," *Columbia University Computing History*, available online at http://www.columbia.edu/acis/history/405.html (accessed 3 August 2012); da Cruz, "IBM Card Sorters," *Columbia University Computing History*, available online at http://www.columbia.edu/acis/history/sorter.html (accessed 3 August 2012); da Cruz, "IBM Card Interpreters," *Columbia University Computing History*, available online at http://www.columbia.edu/cu/computinghistory/interpreter.html (accessed 3 August 2012); and Gathorne-Hardy, *Kinsey*, 241, 186.

[25] Alfred C. Kinsey, "Studies in Human Sexual Behavior, Progress Report," 1 April 1946, 1, Institute for Sex Research 1938–55: Annual Reports, Alfred C. Kinsey Collection, KIA.

[26] Pomeroy, *Dr. Kinsey*, 87.

> I immediately see that it will save us endless hours of work in analyzing our data. It will be possible for us to run correlations of an indefinite number of factors, at least eighty in any one problem—a thing which is utterly impossible by any hand calculation. Wherever we have a tabulation of more than perhaps five hundred cases, wherever we have a problem of figuring frequencies, and wherever we are interested in correlations, it pays to transfer our data to punch cards and get the answers by machine. We have just completed our first set of punched cards which covers the heterosexual-homosexual formulae for the entire lifetime of the individual, and such correlative items as age of adolescence to frequency of outlet per week, etc. I had despaired of ever analyzing these formulae by hand techniques. The machine will do it at the rate of 400 cards per minute. This new equipment is a godsend to our particular problem.[27]

Each individual sex history took ISR staff eighty minutes to punch into thirteen sets of cards, which were then organized into sets. By March 1942 Kinsey and Martin had spent approximately fifteen hundred hours punching fifteen thousand cards with data from twenty-eight hundred interviews. As Kinsey wrote in his March 1942 report, five of the thirteen sets were finished, so "the manuscript on that part of the study should be completed by the end of the summer."[28]

In the ISR's annual and semiannual reports, which Kinsey authored for IU and the National Research Council, Kinsey regularly affirmed the importance of the punched-card machines. In a progress report from April 1944, for example, Kinsey called them "an indispensable procedure for the orientation of our own thinking, and for the planning of the program." Again in 1945 Kinsey reinforced to his university and private funders that the machines and punched cards were essential to his operation: "Our laboratory procedure [is] so organized that incoming histories are absorbed as fast as they are gathered."[29] Use of the punched-card machines and cards speeded the processes of a complex research enterprise and saved staff time for the more personalized, labor-intensive task of taking the sex histories themselves.

All staff members were eventually also responsible for creating the punched cards. Paul Gebhard, who joined the ISR team in 1947 after completing a PhD in anthropology, disliked the grunt work Kinsey required him to do as "an interviewer, card puncher, calculation checker,

[27] Kinsey to Ramsey, 16 February 1941, folder 1, Ramsey File, Kinsey Correspondence Collection, KIA; see also Pomeroy, *Dr. Kinsey*, 88.

[28] Jones, *Alfred C. Kinsey*, 429; Alfred C. Kinsey, "Studies in Human Sex Behavior: Progress Report, Projected Program, 1942–3," March 1942, 6, *Institute for Sex Research 1938–55: Annual Reports.*

[29] Alfred C. Kinsey, "Studies in Human Sex Behavior: Progress Report," 1 April 1944, 4, *Institute for Sex Research 1938–55: Annual Reports*; Alfred C. Kinsey, "Studies in Human Sex Behavior: Progress Report," 1 April 1945, 15, ibid.

index compiler, . . . and general factotum."[30] Pomeroy, trained as a social worker, remembered that he, Martin, and Gebhard "used to say that we were the highest paid clerical staff in the country."[31] The work was often grinding and tedious, but Kinsey trusted no one else to do it. Gebhard and Pomeroy in particular seemed disgruntled that Kinsey relegated them to work that did not make use of their intellectual skills. Once the staff had transferred the interview data onto standard IBM cards (twelve rows, eighty columns each) with the key punch, they used the tabulator and sorter to correlate various combinations of data points (such as age, educational level, and homosexual behavior to orgasm) to each other. Kinsey gave credit to Clyde Martin specifically in his April 1948 report for taking charge of data manipulation, saying that "Mr. Martin has done some unusual things in analyzing data on these machines."[32]

Kinsey did not discuss the machines in personal correspondence beyond two letters to Ramsey, including one cited above. In the *Male* volume, he briefly directed the reader's attention to the machine processing of his data several times, and he also wrote about two of the research processes for which the machines' ability to manipulate large and complicated amounts of data was essential. Both themes provide insight into how thoroughly tabulating machines and machine-produced data were integrated into his thinking throughout the development of the research project and its subsequent data analysis. Kinsey assured his readers that all the punching of

[30] Paul H. Gebhard, "The Evolution of a Sex Researcher," in *Personal Stories of "How I Got into Sex": Leading Researchers, Sex Therapists, Educators, Prostitutes, Sex Toy Designers, Sex Surrogates, Transsexuals, Criminologists, Clergy, and More*, ed. Bonnie Bullough et al. (Amherst, NY: Prometheus, 1997), 167; see also Igo, *Averaged American*, 217; Gebhard and Johnson, *Kinsey Data*, 149–51, 238; and Julia O'Connell Davidson and Derek Layder, *Methods, Sex, and Madness* (London: Routledge, 1994), 83–86.

[31] Wardell B. Pomeroy, interview by James H. Jones, typescript, 15, 19 July 1971, CSHM; see also Igo, *Averaged American*, 218.

[32] Jennifer S. Light, "When Computers Were Women," *Technology and Culture* 40, no. 3 (1999): 471; Alfred C. Kinsey, "Studies in Human Sex Behavior: Progress Report," 1 April 1948, 7, *Institute for Sex Research 1938–55.* In the 1979 volume *Kinsey Data*, Gebhard and Johnson stated that for the *Male* and *Female* volumes, "only those portions of our data which we intended to use in publications were punched on cards," though they do not specify what was left out (*Kinsey Data*, 37). *Kinsey Data* republished the original interview data but was "cleaned" of data from individuals "with known sexual bias," including women in unwed mothers' homes, known members of homophile groups like the Mattachine Society, and even "personal friends of individuals known to be sexually deviant" (ibid., 4). As part of the so-called data cleaning, all of the original cards were also repunched using newer machines and copied onto magnetic tape from 1963 to 1966. Two sets of information remained unpunched as of this writing: details relating to reproduction that had been published in Paul H. Gebhard et al., *Pregnancy, Birth, and Abortion* (New York: Harper, 1958) and "most of the narrative supplementary information on the bottom or reverse of the case history sheet," as "such highly specialized data could wait for a future research project and need not be included in our more basic data storage" (Gebhard and Johnson, *Kinsey Data*, 39). All of the original interview sheets, with or without supplementary information, are stored in the Kinsey Institute Archives.

the cards and the handling of the machines were done by members of the research staff to maintain privacy. He then described how the data were transferred onto the cards.

> Each series of punch cards has carried a particular portion of each history, the frequencies and sources of outlet on one set, the record of the pre-adolescent material on another set, the accumulative incidence data on another, etc. Thirteen sets of cards (thirteen or more cards for each of the histories) have been punched for the calculation of the data presented in the present volume. Each of the thirteen cards in each set has carried the identical record of the age, educational level, occupational class, and other social backgrounds of the subject, mechanically reproduced on the thirteen cards to insure identity. Thus it has been possible to correlate all of the data on the thirteen sets with the same educational and social items.[33]

As Kinsey and his staff collected more than 18,000 histories over the period of the entire project, and since each history filled 13 cards, the staff punched around 234,000 total cards between 1941 and 1956. If they never got faster at the card punching than the eighty-minutes-per-history figure given in 1942, punching 18,000 histories took 24,000 hours. Gebhard remembered that "in those days we lacked computers and our card sorters were slow. A relatively simple table could easily take a full day or two of sorting."[34]

The researchers took advantage of the manipulability of the data by making two types of calculations: determining the accuracy of small group sampling and creating accumulative incidence curves. Though most readers of the *Male* volume focused on the statistics that applied to the entire population of interviewees—such as the estimation that about half of American men had extramarital intercourse—Kinsey believed that his most accurate statistics were of the smaller "ultimate" groups in his sample. An ultimate group was a group with six out of seven similar social and biological characteristics—religion, rural/urban status, sex, age, race, marital status, and educational level—whose behavioral variation could then be more accurately confirmed than that of larger populations. Most of Kinsey's interviewees had been gathered with his unusual form of "snowball" sampling—taking the histories of 100 percent of social groups to whom he lectured or found otherwise. As he did not conduct interviews solely to fill demographic gaps in data but rather interviewed members of groups or associations as they became available, he had uneven numbers of individuals with particular characteristics. Kinsey then wanted to double-check the validity of his ultimate group figures, which aggregated data according to the grouping of characteristics as described above. Thus he selected samples from each ultimate group by randomization and from those samples determined that

[33] Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 111–12.
[34] Gebhard and Johnson, *Kinsey Data*, 8.

four hundred cases per sample was a sufficient number to capture the range of variation in an ultimate group.[35] A later review by American Statistical Association statisticians approved of this methodology and encouraged him, unsuccessfully, to compare the results from his nonrandom ultimate groups with those of a small random sample.[36]

Kinsey deeply embedded tabulating machines across his research tasks. For example, the tabulating machines provided a method for Kinsey and his staff to answer common questions about sexual behavior according to age. They figured out a method to represent visually how many individuals had engaged in a certain behavior by a certain age, which they called an accumulative incidence curve. Its derivation, Kinsey wrote, "was first worked out for a small sample by a hand manipulation of 1058 actual history sheets, adding them to piles as each individual became eligible, withdrawing them as each individual became ineligible for experience." Such a procedure was clearly time-consuming, but it helped the staff ultimately to set up the tabulator to correlate age at the first incidence of each of the behaviors under study and to correlate those two data points with others such as educational and social levels. "It took some time to devise a procedure for Hollerith machine manipulation of punch cards on the problem, but a remarkably simple set-up has now been arrived at," he concluded.[37]

Another example of the way that Kinsey and the ISR staff's use of punched-card machines influenced their data organization and analysis is in the *Male* volume chapter on educational level and sexual outlet. Kinsey and his coauthors put in table form statistics on heterosexual coital techniques and nudity at three educational levels: eighth-grade education or less, high school education, and at least some college or more. The data in the chart showed that side-by-side and female-superior positions were the most frequently used positions across ages and educational levels aside from the so-called biologically natural male-superior position. Men with at least some college education in the adolescent to age twenty-five group were most likely to use a female-superior position and least likely of any age or educational group to engage in coitus in a standing position.[38] Kinsey and the staff could then use such data to hypothesize about the possible age- and education-related reasons for these differences in sexual behavior. They made abundant use of the particular ability of the punched-card sorters to place different elements of hundreds of thousands of sex histories alongside each other to suggest relationships between them. Furthermore, once the staff

[35] For the statement that half of married men had extramarital intercourse, see Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 585. For an explanation of the ultimate groups, see ibid., 83, 85.

[36] William G. Cochran, Frederick Mosteller, and John W. Tukey, *Statistical Problems of the Kinsey Report on Sexual Behavior in the Human Male* (Washington, DC: American Statistical Association, 1954).

[37] Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 119.

[38] Ibid., 372–73.

punched the cards for a history using the key punch or gang punch, they could easily change the brushes on the sorter to gather correlative data for another two- or three-element analysis. The manipulability of the sorting brushes made the creation of mass correlative data a relatively simple task to execute with thousands of histories. The machines made possible new kinds of research questions and the data to answer them.

Kinsey's letters to Glenn Ramsey about the tabulating machines also show his interest in a theme he had discussed with the younger man in other contexts: a heterosexual–homosexual scale. Soon after Kinsey had begun taking sex histories, he had also been thinking about ways to model the diversity of same- and opposite-sex behaviors he had been finding in his sex histories. Ramsey had been interviewing adolescent boys in Peoria, Illinois, where he was a junior high school teacher, for his graduate work, and he too had found varieties of same- and opposite-sex behavior among them. In September 1940 Kinsey wrote to Ramsey describing a 0–6 scale and including a drawing (no longer extant) of a scale modeling gradations in sexual behavior from wholly heterosexual (0) through wholly homosexual (6).[39] In the February 1941 letter, a few months after first obtaining the tabulating machines, Kinsey wrote: "We have just completed our first set of punched cards which covers the heterosexual-homosexual formulae for the entire lifetime of the individual, and such correlative items as age of adolescence to frequency of outlet per week, etc."[40] Indeed, the data supporting this scale were among the first batches he transferred to punched cards and tested for accuracy. The numerical machine-produced data corroborated the numerical 0–6 scale model that he had created by hand. The scale and the data supporting it subsequently became the best-known elements of the *Male* volume, the scale became Kinsey's signature theoretical model of human sexuality, and both the scale and its background data had a long-lasting effect on intellectual studies of sexuality and on homophile rights movements.

Kinsey wrote to Ramsey again in March 1941, detailing another triumph of data manipulation in his work on marital adjustment. "Martin and I are doing the most stupendous piece of work we have undertaken yet," he wrote with amazement. "We are transferring something around six hundred items from the histories to punched cards to be run through our statistical machine. It is a very slow process, but when we get this set of cards done, we will have all the data that will have a bearing on marital adjustment ready for instant analysis."[41] It is unsurprising that Kinsey would have marital adjustment on his mind only six months after the IU marriage course ended. During the course's two years, he lectured that abstinence and delayed marriage were unnatural and implied that premarital sexual

[39] Kinsey to Ramsey, 20 September 1940, folder 1, Ramsey File, Kinsey Correspondence Collection, KIA; see also Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 638.

[40] Kinsey to Ramsey, 16 February 1941.

[41] Kinsey to Ramsey, 28 March 1941, folder 1, Ramsey File, Kinsey Correspondence Collection, KIA.

experimentation would speed sexual adjustments after marriage. Kinsey's encouragement to college men and women alike to "work out your own solution" sexually, married or otherwise, was one of the primary reasons the IU administration forced his resignation from the marriage course.[42] In the *Male* volume, Kinsey was able to use machine-created data to correlate rates of heterosexual "petting" (Kinsey's term for foreplay), premarital intercourse, and divorce to disprove the notion that premarital sexual experimentation would lead to higher rates of divorce. In fact, he found the reverse—that individuals making premarital sexual "adjustments" and gaining some knowledge of sexual behavior had a smoother transition to married life and were less likely to divorce.[43] He promised a full accounting of the role of sexual adjustment in successful marriage in a subsequent study; nonetheless, he concluded from his preliminary study that "sexual maladjustments contribute in perhaps three-quarters of the upper level marriages that end in separation or divorce."[44] Middle- and upper-class persons were most likely to adhere to the sexual restraints their families and peer groups established and enforced in their premarital years and found it hardest to let them go after marriage. Machine-produced data made that conclusion, and the hundreds more in the *Male* and *Female* volumes, possible. The inescapable presence of machine-produced data in the Kinsey reports emphasized the importance of quantitative methods in the human sciences.

Even though Kinsey had thoroughly absorbed tabulating machines into his work, he knew that there were limits to what they could do. The sexual behavior of human beings was too complex to fit into even a 521-question form. Many of the eighteen thousand interview sheets contain notes on their lower margins or on their reverse side, or they are stapled to additional pages with the interviewer's notes. If the interviewee had had multiple marriages, extensive homosexual experience, or prison time or had engaged in specialized sexual behaviors such as sadomasochism or hiring prostitutes or hustlers, his or her answers were written outside the form. Such information could not be easily punched onto cards, and it found its way into the *Male* and *Female* volumes, if at all, in shades of nuance and interpretation. After all, as Kinsey wrote in the *Female* volume, "it is a mistake to believe that standard questions fed through diverse human machines can bring standard answers."[45] The *Male* and *Female* volumes integrated machine-processed data and qualitative material together, but it was the machine-processed data and the conclusions drawn from them that marked the sharpest break between Kinsey and his predecessors in sex research.

[42] Alfred C. Kinsey, "Biologic Bases of Society," 11, 28 June 1938, folder 1, series V.A.1.g, box II, Alfred C. Kinsey Collection, KIA.

[43] Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 7.

[44] Ibid., 544. Kinsey never completed the marital adjustment study due to his premature death in 1956.

[45] Kinsey et al., *Sexual Behavior in the Human Female*, 61.

TABULATED DATA IN SEX RESEARCH

Both the *Male* and *Female* volumes were literary heirs to a tradition of scientific human sex research beginning with Richard von Krafft-Ebing and Sigmund Freud in the late nineteenth century, followed in the early twentieth century by Havelock Ellis, Marie Stopes, Magnus Hirschfeld, Katharine Bement Davis, Robert Latou Dickinson, Carney Landis, Gilbert V. Hamilton, George W. Henry, and others.[46] Yet the inclusion of long narrative histories of individual patients characterized the work of each of these previous authors, whether they were physicians, psychiatrists, biologists, or sociologists. Some had included simple percentage calculations if they had used a questionnaire. The subjects of the interviews were normally patients of the author, or in some cases author and subject knew each other only through exchanges of letters. The author often used patient data or that correspondence to make broad generalizations about the sexuality of the population under study and about humanity generally. Their books were intended for use by fellow clinicians and professionals, not for the public. Sometimes excerpts of the original texts would be in Latin or in Greek in order to deter the casual reader from coming across salacious material. This short example of a standard narrative history is from the chapter on homosexual behavior in unmarried college women from Davis's *Factors in the Sex Life of Twenty-Two Hundred Women*:

> This business woman of 41, a graduate from a woman's college, states that she was once engaged to be married, but did not love the man and broke it off. She absolutely denies any sex feelings or experiences as a child. She had no curiosity as a child, no information from either father or mother. Her first information came from a teacher when she was 15 years old. She had no preparation for menstruation, which occurred at the age of 12. She never knew anything about sexual intercourse until, at 19, while in college, she learned it from a fellow-student. . . .

[46] See, for example, Richard von Krafft-Ebing, *Psychopathia Sexualis: With Especial Reference to Contrary Sexual Instinct; a Medico-Legal Study* (Philadelphia: F. A. Davis, 1892); Sigmund Freud, *Three Essays on the Theory of Sexuality* (New York: Basic Books, 1975); Havelock Ellis, *Studies in the Psychology of Sex*, 6 vols. (Philadelphia: F. A. Davis, 1905–13); Marie Stopes, *Married Love* (1918; Oxford: Oxford University Press, 2004); Katharine Bement Davis, *Factors in the Sex Life of Twenty-Two Hundred Women* (New York: Harper & Bros., 1929); Robert Latou Dickinson and Lura Beam, *A Thousand Marriages: A Medical Study of Sex Adjustment* (Baltimore, MD: Williams & Wilkins, 1931); Robert Latou Dickinson and Lura Beam, *The Single Woman: A Medical Study in Sex Education* (Baltimore, MD: Williams & Wilkins, 1934); Gilbert V. Hamilton, *A Research in Marriage* (New York: Albert and Charles Boni, 1929); Carney Landis and M. Marjorie Bolles, *Personality and Sexuality of the Physically Handicapped Woman* (New York: Paul B. Hoeber, 1942); Carney Landis, Agnes T. Landis, M. Marjorie Bolles, et al., *Sex in Development: A Study of the Growth and Development of the Emotional and Sexual Aspects of Personality together with Physiological, Anatomical, and Medical Information on a Group of 153 Normal Women and 142 Female Psychiatric Patients* (New York: Paul B. Hoeber, 1940).

> From childhood on she had intense emotional relations with other girls or women. She says, "Not more than one at a time." Until her last experience, they were not associated with sex in her own mind and were without physical expression other than hugging and kissing. For seventeen years she has had a relation with a woman which has continued up to the present time, and which she gives as a reason for remaining single. She writes: "I have a woman friend whom I love and admire above everyone in the world and with whom my life is perfectly happy because of our mutual love and congeniality in all things. The physical factor is only one minor factor in the friendship which is based on perfect congeniality and love." She has always been in excellent health, is happy, and considers herself successful. Her chief interests outside of her work lie in outdoor sports. She has never had any sex problems in her life.[47]

Kinsey's publications, with their focus on statistics derived from large samples and widespread release, were a marked break from the norms of sex research literature. The *Male* and *Female* volumes, while influenced by narrative histories and qualitative data like Davis's, were instead centered on machine-produced data. The *Male* volume had 154 tables and 173 figures of statistics with titles such as "Animal Contacts: Individual Variation in Frequencies in Two Age Periods, at Three Educational Levels." The *Female* volume had 155 figures and 179 tables. Kinsey and his team spent the first chapter of the *Male* volume deriding the narrative sexological tradition. By downplaying qualitative narrative methodology in favor of quantitative data gathering, Kinsey was setting aside one of the most popular and dependable tools of sex research.

Kinsey sought to boost the scientific seriousness of his reports through a medical publishing house, W. B. Saunders of Philadelphia, which widely publicized and advertised them. And the public bought them in droves: approximately two hundred thousand copies of the *Male* volume were sold in the United States in the first two months of its publication. Around three-quarters of a million copies of both the *Male* volume and *Sexual Behavior in the Human Female* have been sold as of 2008, including sales of translated editions.[48]

Interestingly, after the books were released, those who might have been expected to take the harshest view of the use of machines, academics in the human sciences, criticized Kinsey's quantitative data but rarely mentioned the use of machines for its production. The attorney Fowler V. Harper, in the opening of his March 1948 commentary on the *Male* volume's legal

[47] Davis, *Factors in the Sex Life*, 281–82.

[48] Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 672, 674; Kinsey et al., *Sexual Behavior in the Human Female*. Sales figures are from Pomeroy, *Dr. Kinsey*, 276, and Ron Jackson Suresha, "'Properly Placed before the Public': Publication and Translation of the Kinsey Reports," *Journal of Bisexuality* 8, nos. 3–4 (2008): 207, 227.

implications, stated his lack of interest in the data's creation, leaving it to others to examine "how significant is the fact that we have here thousands of answers distilled through the minds and emotional apparatus of *two* human beings (to say nothing of the I.B.M. machines)—the person who is reporting his sex experiences and his reactions thereto and the individual to whom he is reporting them."[49]

Ruth Benedict, Margaret Mead, and M. F. Ashley Montagu, three prominent social scientists, objected strongly to Kinsey's data collection and quantitative methodology. Ruth Benedict, then an associate professor of anthropology at Columbia University, shared her opinion of the *Male* volume on a February 1948 radio program broadcast on radio station WMCA in New York City. "What the Kinsey Report has done . . . is to count, add, and average the sexual activities which men remember and report in interviews. It is quantitative, not qualitative," she stated and cautioned against using its data to inspire policy changes. "Dr. Kinsey's findings are not yet the kind of qualitative data on which to base new programs in sex instruction in our schools; new legislation about sex events; new counseling of young people in marriage."[50] Margaret Mead, then associate curator of ethnology at the American Museum of Natural History in New York City and one of the best-known anthropologists in the country, spoke at a symposium on the *Male* volume held by the American Social Hygiene Association in March 1948 and made the complaint that the *Male* volume included no discussion of emotion, pleasure, love, or intimacy. "There is no suggestion of emotional content, of spiritual significance, of non-spiritual significance, of ethical significance, of rich fantasy," she declared. Like her fellow anthropologist and sometime romantic partner Ruth Benedict, she argued that Kinsey's quantitative study of sexual behavior was too far out of social context to be useful for applied research. "We have here a document of great size, validated by the expenditure of a great lot of money which is very important in America. . . . So it has every single requirement of importance—size, numbers, money, meetings, publicity and sales, all to reinforce the major basic trends in our society that have made sex behavior disassociated, sinful and meaningless, because it has not been placed in an inter-personal context, it is not attached to the most important values of the relations between people."[51]

[49] Fowler V. Harper, "Legal Considerations in Relation to the Report," in *Problems of Sexual Behavior: Research, Education, Community Action; Proceedings of a Symposium Held by the American Social Hygiene Association during Its Annual Conference of Social Hygiene Executives, March 30–April 1, 1948, in New York City, to Consider the First Published Report of a Series of Studies of Sex Phenomena by Alfred C. Kinsey, Wardell B. Pomeroy, and Clyde E. Martin, and Its Relation to the Social Hygiene Program* (New York: American Social Hygiene Association, 1948), 48, emphasis in the original.

[50] Abraham Stone, Ruth Benedict, and S. Bernard Wortis, interview by Morris Ernst, *The Kinsey Report: [A Discussion]*, WMCA, 1948. Sound recording 522 K56k, A-V Collection, KIA.

[51] Margaret Mead, "An Anthropologist Looks at the Report," in *Problems of Sexual Behavior*, 64, 68.

When the *Male* volume appeared in early 1948, M. F. Ashley Montagu, a British-born professor of anatomy at Hahnemann Medical College in Philadelphia, attacked Kinsey's figures on the wide prevalence of same-sex acts as an example of misguided American values on numbers. "The most stupendous fallacy which runs through the whole work is the authors' implied assumption that the normal is equatable with a large quantity," Montagu declared. "Since, in America, *quantity* is a moral value which makes acceptable and normalizes what in lesser quantities would be unacceptable and abnormal, the conclusion most likely to be drawn is that what has hitherto been thought unacceptable and abnormal must now be accepted and regarded as normal."[52] Montague was particularly incensed at an American society that allowed same-sex behaviors to happen in such abundance.

Homophile groups and gays and lesbians, in sharp contrast, responded to the two volumes with enthusiasm. The correlation between the tabulating of interview data with a sorter and the creation of the homosexuality–heterosexuality scale in Kinsey's work and thinking suggests that the use of punched cards was a critical inspiration for the scale. The best-known statistic Kinsey obtained from the sex history interviews and the scale became the figure of 10 percent: 10 percent of males interviewed were rated a 5 or a 6 on the scale, that is, they were more or less exclusively homosexual for three years between the ages of sixteen and fifty-five. The scale and the estimation of the US homosexual population at 10 percent, both derived from punched-card machine data, became the most visible and lasting elements of Kinsey's analysis of homosexuality and of human sexuality in general.[53]

Numerous individuals who identified as homosexuals found comfort and solace in Kinsey's findings that same-sex behavior was so widespread in his study population.[54] English professor turned tattoo artist and pornographer Samuel Steward revered Kinsey and his work. Asked in a 1983 interview about the effect of the *Male* volume's publication on gay men, Steward replied: "We looked on [Kinsey] as a savior. He was the liberator. He was our Stonewall. . . . He got everybody involved. . . . All of us were aware of Kinsey's statistics." As Steward's biographer put it, "Through statistics, Kinsey had presented . . . a whole new way of understanding the sexual self. Among those with a homosexual orientation, feelings of guilt, shame, anxiety, and depression could be particularly intense. . . . Certainly

[52] M. F. Ashley Montagu, "Understanding Our Sexual Desires," in *About the Kinsey Report: Observations by 11 Experts on "Sexual Behavior in the Human Male,"* ed. Donald Porter Geddes and Enid Curie (New York: New American Library, 1948), 63, emphasis in the original.

[53] Kinsey, Pomeroy, and Martin, *Sexual Behavior in the Human Male*, 638; for more detail on the impact of the 0–6 scale on mid-twentieth-century American political culture and activism, see Donna J. Drucker, "Male Sexuality and Alfred Kinsey's 0–6 Scale: Toward 'A Sound Understanding of the Realities of Sex,'" *Journal of Homosexuality* 57, no. 9 (2010): 1105–23.

[54] Jones, *Alfred C. Kinsey*, 573, 674–77.

they were enormously healing for Steward."[55] One lawyer in San Francisco used the data in the *Male* volume to argue for the right of homosexuals to assemble freely in bars and in other public places. At a lesbian bar in the same city, the Anxious Asp, pages from the two volumes were tacked up as wallpaper in its restrooms. Kinsey's findings "had a tremendous impact on gay and lesbian social movements," especially as "homophile activists realized the importance of their own work and became ever more cognizant of the positive impact of scientific research."[56]

Kinsey's statistics on homosexual behavior prompted some homosexuals to become further involved in sexual identity–based organizations. Research by Kinsey—followed later by the work of others like psychologist Evelyn Hooker—"bolstered homophile confidence and fueled the belief that scientific research would pave the way for homosexual integration."[57] Thus data generated from punched-card machines were important in shaping modern American sexual politics, including concepts of sexual identity. They played a critical role in developing homophile groups and broader gay rights movements in the mid- to late twentieth century by revealing the large number of persons who engaged in homosexual behavior. At the same time, cultural conservatives began to use 10 percent as their estimate of the "deviants" at large in the American public and to agitate for the need for greater attention to and vigilance against "sex perversion." Punched-card data anonymized individuals in other contexts and for other functions. So Kinsey's data served to organize both homosexual groups and those groups' opponents. While Kinsey's successors in the field of sex research were not inspired to use punched-card machines as he had, the machines themselves, in one form or another, were in sex research to stay.

While Kinsey's sex history interviewing techniques developed a following among psychiatrists, psychologists, public health physicians, and social workers in particular, punched-card machine tabulation never did.[58] By the

[55] "Alfred Kinsey and Homosexuality in the 50s: The Recollections of Samuel Morris Steward as Told to Len Evans," ed. Terrence Kissack, *Journal of the History of Sexuality* 9, no. 4 (2000): 477; Justin Spring, *Secret Historian: The Life and Times of Samuel Steward, Professor, Tattoo Artist, and Sexual Renegade* (New York: Farrar, Straus and Giroux, 2010), 115. Steward became one of Kinsey's most faithful record-keepers and correspondents.

[56] Nan Alamilla Boyd, *Wide-Open Town: A History of Queer San Francisco to 1965* (Berkeley: University of California Press, 2003), 121–22, 145, 83, 187.

[57] Ibid., 189. See also Allan Bérubé, *Coming Out under Fire: The History of Gay Men and Women in World War Two* (New York: Penguin, 1990); John D'Emilio, *Sexual Politics, Sexual Communities: The Making of a Homosexual Minority in the United States, 1940–1970* (Chicago: University of Chicago Press, 1983); David K. Johnson, *The Lavender Scare: The Cold War Persecutions of Gays and Lesbians in the Federal Government* (Chicago: University of Chicago Press, 2004); Jonathan N. Katz, *The Invention of Heterosexuality* (1995; Chicago: University of Chicago Press, 2007).

[58] Wardell B. Pomeroy, Carol C. Flax, and Connie Christine Wheeler, *Taking a Sex History: Interviewing and Recording* (New York: Free Press, 1982); J. R. Heller Jr., "Some Considerations of the Report in Relation to Public Health," in *Problems of Sexual Behavior*, 106–9;

mid-1980s personal computing had completely taken over punched-card machines in science and business, and computers had become essential components of research and everyday tasks. Nonetheless, Kinsey's punched-card machines marked a shift in the focus of human sex research from qualitative to quantitative data in the mid- to late twentieth century. His uncritical adoption of mechanical equipment into his research unequivocally signaled that the days of Havelock Ellis, Katharine Bement Davis, Robert Latou Dickinson, and George Henry were over. Detailed personal histories would fill long pages of more popular books on sexual behavior, but they would no longer make up the bulk of scientific sex research tomes.[59] Qualitative and machine-gathered and -processed quantitative data would be created and analyzed in tandem. Machines enabled the production of mass data that would drive the research questions and agendas, analytical methods, and conclusions of academe, politics, and popular culture.

Howard Hsueh-Hao Chiang, "Effecting Science, Affecting Medicine: Homosexuality, the Kinsey Reports, and the Contested Boundaries of Psychopathology in the United States, 1948–1965," *Journal of the History of the Behavioral Sciences* 44, no. 4 (2008): 300–318.

[59] See, for example, Shere Hite, *The Hite Report: A Nationwide Study of Female Sexuality* (New York: Macmillan, 1976).